

Christmas invaders

The 'occupation' may be short-lived if you're unfamiliar with the equipment

Sales of video games consoles and home computers peak around Christmas and prices have dropped considerably over the past few months. If your kids tend to hang out in video arcades, buying a games console or a computer for Christmas may be the way to keep them at home. But if you don't know what you're buying, the equipment may turn out to be a seven day wonder.

CHOICE has tested the more affordable models among games consoles and computers. Our findings will help you to choose the right system for you, but if you don't know a thing about computers, you'll be a lot wiser after reading *Time for a home computer* (CHOICE, March 1983) and the update in August 1984.

For the games that kids like see *Kid's CHOICE* on page 26.

The options

Choosing the right games equipment for your family isn't easy.

First you have to decide whether you want to buy a games console or a computer.

A games console comes complete with controls and usually a couple of games cartridges. It's all you need to play games – apart from a TV set – but after Boxing Day you're likely to be under pressure to buy more games cartridges – and they cost about \$40 each.

Nevertheless, if you're simply after occasional entertainment and don't intend to become involved in computer technology, then a games console is what you need.

The alternative is not a computer but a computer system. An advertised price of less than \$200 for a computer might look tempting, but once you add on the cost of all the components you need to play games the comparison is much less favourable.

Computer systems are for those who want to learn programming – either for professional reasons or as a hobby. They are also of interest to compulsive video games players who either cannot afford more and more cartridges, want to write their own games or type them in from magazines and books.

Software we bought:

(All were cartridges except where indicated)

With ATARI and CBS ColecoVision: Activision Barnstorming; Atari Air Sea Battle, Berzerk, Dodgem, E.T., Missile Command, Pac-Man, Space Invaders

With BIT-90 and CBS ColecoVision: CBS Cosmic Avenger, Donkey Kong, Mouse Trap

With COMMODORE VIC-20: OZI-Soft Vic-20 Get Lost (cassette), UMI (Imagineering) Satellites and Meteorites

With DICK SMITH VZ 200 (all cassettes): Ghost Hunter, Invaders, Metric Spycatcher, Speed Reading*, Spellomatic*, Super Snake

With SPECTRAVIDEO SV-318 (all cassettes): Introduction to BASIC*, Armoured Assault, Spectra Home Economist*, Spectron

With TANDY TRS-80 Colour Computer: Monster Maze, Project Nebula

With TEMPEST MPT-03: Nibblermen, Alien Invader

With VECTREX: Bedlam, Clean Sweep

* not rated for entertainment value as they are not games.

What we bought

Our technical purchasing section checked what was available for under \$350 and came up with four games consoles and five computer systems.

The price had to include a minimum of two software game cartridges and a joystick control even if the joystick wasn't absolutely necessary for the games supplied. In fact we often got packages which included much more.

The systems and the prices are listed in Tables 1 and 2 on pages 30 and 31.

All systems but one connect to a TV set (or a special monitor). The VECTREX has a built-in screen which means the rest of the family can still watch TV when somebody is playing.

The test

Once you have a new games console or computer system you'll be impatient to start playing, so anything difficult to set up will be frustrating. We tested how easy it was to set up each system, then played games on each one, recording the shortcomings of both hardware and the games programs.

All units passed the electrical safety tests.

Problems

Early this year we surveyed CHOICE subscribers and their children about their experiences with games consoles and computer systems. According to the survey, both are reasonably reliable, but users complain about the time it takes to get repairs after a breakdown. Repair costs are generally low – this may be because many systems are still under warranty.

We had our test samples of the CBS ColecoVision console and the expansion module for Atari cartridges replaced under warranty because the module didn't work and we were not sure whether the fault was in it or the console.

Commodore cartridges fit the VIC-20, but one cartridge from the IMAGINEERING software company for the same computer could be inserted only with difficulty.

The tape disconnected in a cassette with a SPECTRAVIDEO game program.

Some of the people we met in computer shops warned us that joysticks often don't last long. In fact, no joystick broke during the test but we didn't subject them to a durability test.

Connections

The games console or computer is connected to the TV through its antenna socket. Connecting and disconnecting cables every time you want to switch from TV to games system and vice versa is a bit tedious, so buy a switch-box –

it lets you select the connection at the flip of a switch. Some systems come with a switch-box, others don't. You can buy one for about \$4. Some new television sets have a composite video signal connection for games and computers.

This connection bypasses the tuner, allowing better resolution than the antenna input and eliminating the need for a switch-box.

Buying a special video monitor is another way of improving image resolution for games and computer display. It improves the picture from a video cassette recorder, too. Video monitors are expensive, but there is sometimes a cheaper alternative – a TV set minus the tuning circuits.

Good and bad joysticks

The fun in video games comes from beating the machine. So you need a joystick which transmits hand movements directly and accurately to the screen and has the right 'feel'.

To give the right feel the joystick should be spring-loaded so that it always returns to the central neutral position.

There are two types of joystick:

- micro-switch type, 8-directional play, a good choice for beginners.
- analogue, potentiometer-type, 360° play, a bit more difficult to use, but you have more control.

Games consoles come with joysticks, but if you buy a computer it's usually an accessory you have to pay extra for. Compare the 'original' joystick with models supplied by independent manu-

facturers – there are many to choose from, and the original may not be what suits you best. Some 'independent' joysticks also fit the **ATARI** and **CBS** games consoles and should be considered if you need a replacement.

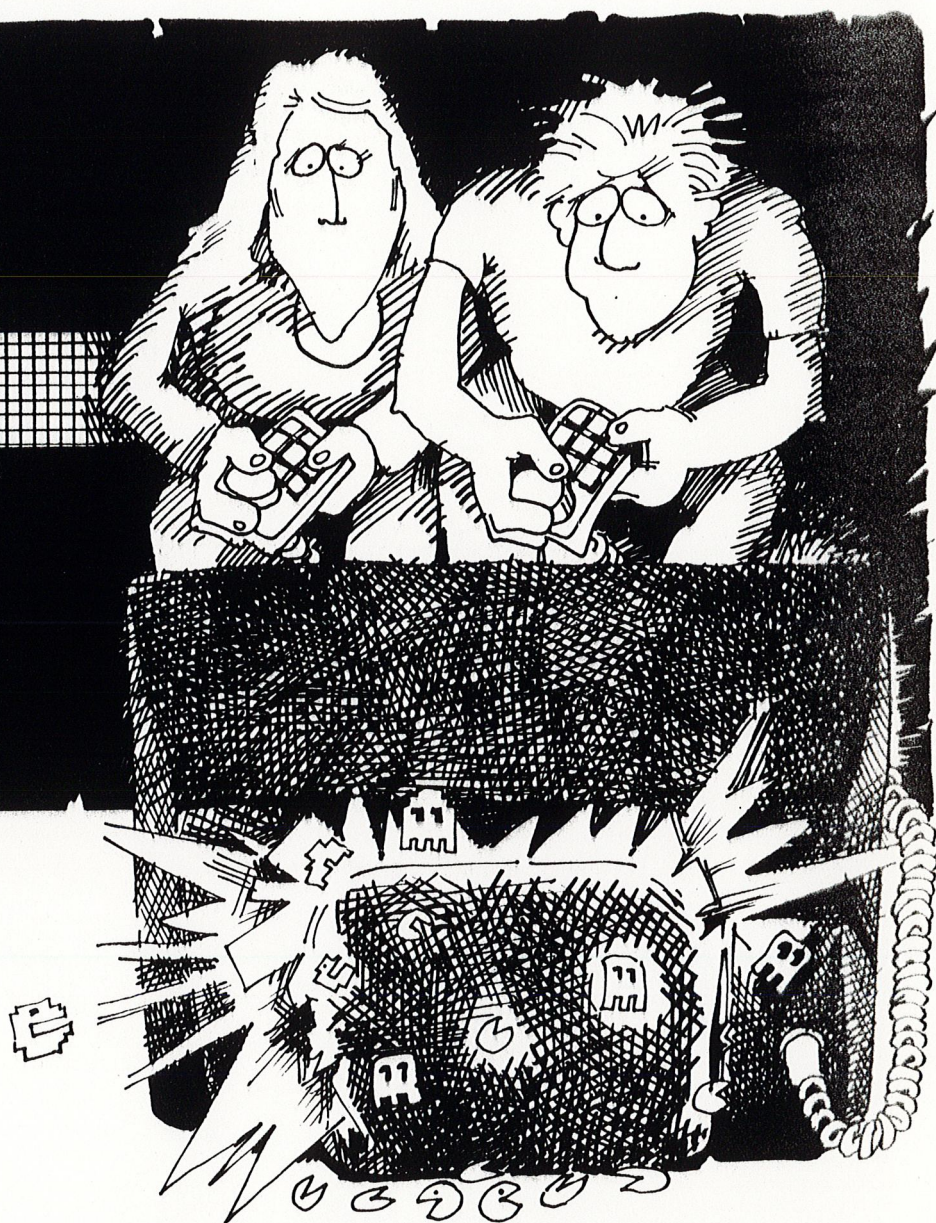
Lots of possibilities

The most advanced games console we tested was the **CBS ColecoVision**. CBS have tried to provide games as similar to those in arcades as possible, and one of the accessories is a 'racing car module' with steering wheel, gearshift and throttle pedal. It comes with the Turbo game cartridge. There is also an adapter module which we bought that allows you to use Atari cartridges. And if you find you should have bought a computer and not a games console, you can supplement **CBS ColecoVision** with the Adam computer module.

The **BIT-90** computer can use **ColecoVision** games, but not the Atari or steering wheel modules.

Programs for games consoles come in cartridge form, those for computers (including games) are available as cartridges, cassettes and floppy discs, but not in all forms for all computers (see Table 2). Cassettes are cheaper than cartridges and can be used to store your own programs. Some computers can use an ordinary cassette recorder; others, like the **SPECTRA-VIDEO SV-318** and **COMMODORE VIC-20**, need a unit especially adapted for the system. Either way, to load a program into a computer from a cassette takes a couple of minutes depending on the complexity of the program.

With cartridges the game is ready to play immediately you slot the cartridge in. You pay for this convenience, and buying overseas cheaply may not be the solution – for example, Atari cartridges from the US (for the NTSC TV system) don't work in a console made for the PAL system we have in Australia.



Floppy discs, the third option for computer games and other programs, let you store lots of information in a minimum of space. The disc drive loads the computer in seconds. It too is expensive, and is not available for some of the cheaper systems.

Our survey

The notion that video games consoles are a passing fancy is not confirmed by our survey.

Some users did report they soon got bored with the games and wanted more variety and challenge. But others found exactly what they wanted in a games console. More than half (52%) said they would consider buying the same type of games console again, and brand loyalty was even higher, although CBS ColecoVision owners were generally more satisfied than ATARI owners.

Among owners of computer systems, those with a **COMMODORE** were more satisfied than the average – 85% would buy the same type of system again and no less than 92% would buy the same brand.

In all, 80% of owners of computer systems connected to TV sets would buy a similar system again, and no less than 85% of owners of computer systems with separate monitors said their investment was good enough to be repeated.

Not surprisingly, the more sophisticated the system, the more time is devoted to it. Owners of games consoles spent an average seven hours a week with them. Owners of TV connected computers played for eight hours a week and those who had a computer with a separate monitor spent 13 hours a week with it.

The time spent at the video game console or computer is taken from other activities, mainly TV viewing.

Unfortunately, 17% of the young respondents report they spent less time studying after they got the computer or games console. Parents who buy a computer system for a child with the objective of improving his or her scholastic performance may not get the hoped-for effect.

Computers with limitations

The computers we tested this time all have a limited capacity. To play more complex games and for professional or educational purposes you'll need an optional RAM expansion board or module. Another limitation is the number of characters per line on the screen – but some computers have an expansion module which increases the number. If you have no doubt at all that you or your youngster will be into computers for keeps it could be a good idea to look at slightly more advanced computers than the ones we tested. A more advanced model in the range may use the same

Table 1 GAMES CONSOLES (in alphabetical order)				
Brand/model	Manufacturer/distributor	Origin	Price (\$) RRP/paid	Guarantee
ATARI 2600	Futuretronics	Hong Kong	199/159 ⁽¹⁾	90 days
CBS ColecoVision	CBS Electronics	Hong Kong	249/249 ⁽²⁾	90 days
TEMPEST MPT-03	Tempest Electronics	Hong Kong	50/ 80 ⁽³⁾	90 days
VECTREX	Milton Bradley	Taiwan	229/ 99	90 days
(1) package deal incl six cartridges. RRP incl one cartridge (Space Invaders).			(3) package deal incl one game cartridge	
(2) package incl Atari expansion module (RRP \$75) and one cartridge.			<input type="checkbox"/> Recommended	



peripherals, so the difference in cost may be small – or negligible, if you have to buy expansion modules for the basic model.

On the other hand, if you have doubts whether you or the person you buy the computer for will get hooked on programming, buy something cheap so the loss will be small if the fascination wears off after a few weeks.

One of the most asked-about applications of home computers is word processing. It's out of the question with a cheap model unless it has a big memory and should only be considered with computers having a good, typewriter-like keyboard. CBS ColecoVision recently offered a complete system with the Adam computer module and a printer for \$1099. That's one of the cheapest available – with a daisy-wheel printer.

We are currently testing the computing aspects of these units (and others) and will report on them next year.

Assessment

CBS ColecoVision is the only games console with expansion possibilities – it can be connected to the Adam computer and peripherals for, among other things, word processing. Even if you're not interested in expanding it, we recommend it for its good graphics and sound, the variety of software available and the quality of its joysticks.

At the price we paid, \$249 including the adapter module for Atari cartridges and a Donkey Kong CBS cartridge, it's the

top value in the test. The main disadvantage is the cost of more cartridges – they start at about \$30.

ATARI 2600 is the most sold of the games consoles. It's extremely easy to use, the joysticks operate smoothly and there is an almost endless variety of games available, most with good entertainment value.

The special package offer we got (\$159) including six games cartridges, was good value – Atari cartridges are as expensive as ColecoVision ones.

BIT-90 ranked highest as a games machine among the computer systems – but not necessarily for other uses. One of its advantages is that it accepts CBS cartridges, and with these it produced the best graphics in the test.

As with other computers you need a cassette recorder if you want to do your own programming or use software in the form of cassettes, but the whole system is inexpensive and good value.

The main disadvantage is the rubber keyboard – all rubber keyboards we tested were prone to non-keying.

Manufacture of the **COMMODORE VIC-20** has recently been discontinued but it's definitely worth trying to get if you want to learn to write your own programs and plan to do a lot more than play games on your equipment.

The keyboard is its greatest asset. There's a lot of software available for it, and the system can be used with the same accessories for the Commodore 64 (which remains in production).

A minor drawback is that the vic-20 requires a dedicated cassette recorder – but it's cheap, only about \$50.

SPECTRAVIDEO SV-318 is a compromise – it has some great features but isn't perfect for either games or computing. Games are less detailed than the ones you get with CBS and ATARI cartridges, and there aren't many to choose from. But picture quality is good.

If you want to write your own programs, the computer has a comparatively large memory capacity and can be extended – but at the same time, the rubber

Table 2

HOME COMPUTERS (in alphabetical order)

Brand/model	Manufacturer/distributor	Origin	Price (\$) RRP/paid	Guar- antee	Type of keyboard	Memory available	RAM expandable to	Dedicated cassette recorder needed?	Input for disc drive	carl- ridges	printer	Whole TV screen used?	Inter- change- able joystick plugs?
BIT-90 PAL	Electronic Warehouse	Taiwan	199/169 (1)	90 days	rubber	ns	ns	no	✓			✓	✓
COMMODORE VIC-20	Dick Smith†	England	229/179	90 days	typewriter	5K	32K	yes	✓	✓	✓		✓
DICK SMITH VZ 200	Dick Smith	Hong Kong	na/229 (2)	90 days	rubber	8K	24K	no†		✓	✓		
SPECTRAVIDEO SV-318	Rose Music	Hong Kong	na/299	90 days	rubber	32K	96K	yes	✓	✓**	✓	✓	✓
TANDY TRS-80	Tandy	Korea	250/250	90 days	typewriter	16K	64K	no	✓	✓	✓		
na not available ns not stated * with interface ** with adaptor	† Dick Smith has taken over remaining stock of the Vic-20, but peripherals are also available from Commodore Business Machines							(1) package incl two joysticks and one cartridge, 32K memory (2) package incl joystick, 16K RAM module, cassette recorder and six program cassettes	✓ has this feature <input type="checkbox"/> Recommended				

Table 3

PERFORMANCE

(in order of preference as a games system within the groups)

Brand/model	Keyboard action	Joystick's feel & response	Sound	Graphics	Entertainment value of software tested*	Ease of operation	Instructions	Overall ranking
GAMES CONSOLES								
CBS Colevision	●●●	●●●●●	●●●●	●●●●	●●●●●	●●●●●	●●●●	●●●●●
ATARI 2600	na	●●●●	●●●●	●●●	●●●	●●●●●	●●●●	●●●●
VECTREX 300-A1	●●●	●●●	●●	●●●●**	●●	●●●●●	●●●●	●●●●
TEMPEST MPT-03	●●●	●	●●	●	●●	●●●●●	●●●●	●●●
COMPUTER SYSTEMS								
BIT-90 PAL	●●	●●●	●●●●	●●●●	●●●●†	●●●●	●●●●	●●●●
COMMODORE VIC-20	●●●●	●●	●●	●●●	●●●●	●●●	●●●†	●●●●
SPECTRAVIDEO SV-318	●●	●●●	●●●	●●●●	●●●	●●●	●●●●	●●●●
DICK SMITH VZ-200	●●	●●	●●	●●●	●●	●●●	●●●●	●●●
TANDY TRS-80	●●●●●	●	●●●	●●	●	●●●●	●●●●	●●●
* what you buy may be quite different					the more dots the better			
** monochrome screen					<div> </div> Recommended			
† with CBS cartridges								
good handbook but downrated because								
games instructions come on loose sheets								

keyboard is a disadvantage. This system needs a special tape recorder if you use software on cassettes. The SPECTRAVIDEO is worth considering – a good buy if you can forgive the keyboard.

VECTREX 300-A1 has been discontinued, which explains the sale price of only \$99 – less than half the recommended retail price. The VECTREX has its own high resolution picture screen, so you can play without interfering with the TV viewing of other family members. However, there are very few games available for it and the ones we tested were very similar. Cartridges may not be available in the future, so if you buy this unit, it would be wise to pick up a good supply of games cartridges at the same time.

DICK SMITH VZ 200 is not a good games

machine. Games for it are not very detailed, picture quality is smeary and the joysticks are poorly designed and cannot be replaced with one from another manufacturer. However, it is a suitable computer for those who want to learn BASIC programming despite the rubber keyboard, which tires the operator and occasionally doesn't register when a key is pressed. It's inexpensive and it works.

TANDY TRS-80 Colour Computer is another system that's more suitable for computing than for games.

The games we tested were rather boring, picture quality was poor and smeary, and the range of games available for the TRS-80 is small. The joysticks are flimsy and don't return to

centre by themselves. If you want to use it for computing it's worth thinking about – it had the best keyboard response in the test.

TEMPEST MPT-03 is a very basic games console with only two levels of skill and unexciting software. Its worst point is the poor design of the joysticks – its best the simplicity of operation.

It's cheap but you run the risk of it being put away on a shelf within a few days – and if that happens, it's not a good investment.

What to buy

This rating is based on performance for video games use only, not computer function. There is one exception to the order of preference from the test – VECTREX has only been rated acceptable because it's no longer manufactured and there's great uncertainty about future service and software supply. The situation is different with the also discontinued COMMODORE VIC-20 – there is a well established market for vic-20 software, and it uses the same peripherals as the Commodore 64, which remains in production.



RECOMMENDED (in order of performance – video games use only)

	Price (\$*)
CBS ColecoVision (g)	249
ATARI 2600 (g)	98
BIT-90 PAL (c)	199
COMMODORE VIC-20 (c)	149
SPECTRAVIDEO SV-318 (c)	299

ACCEPTABLE

	Price (\$*)
VECTREX 3000-A1 (g)	99
DICK SMITH VZ 200 (c)	99
TANDY TRS-80 Colour Computer (c)	300
TEMPEST MPT-03 (g)	50

*pre-publication price check
c computer
g games console